

Gear Pump / Motor

Features

2000M Bi-Rotational Gear Pump/Motor

- The 2000M Series Pump/Motor utilizes the features of the widely accepted HYDRECO 2000 Series pumps and 3MO motors.
- Operating as pumps, the smaller units can be applied at speeds up to 2400 rpm and pressures up to 1500psi. Operating as motors, the same pressure can be used, but the speed ratings are further increased.
- The most important feature of the 2000M is its mechanical face seal. This allows for back pressure up to 1500 PSI with no case drain. By eliminating case drain lines, system cost is greatly reduced, especially in series circuit applications.
- The 2000M configuration uses heavy duty cast-iron construction and it maintains the unique four-bolt design, which places all four assembly bolts within

the area of greatest internal pressure. This greatly reduces internal distortion and the resulting wear of internal parts.

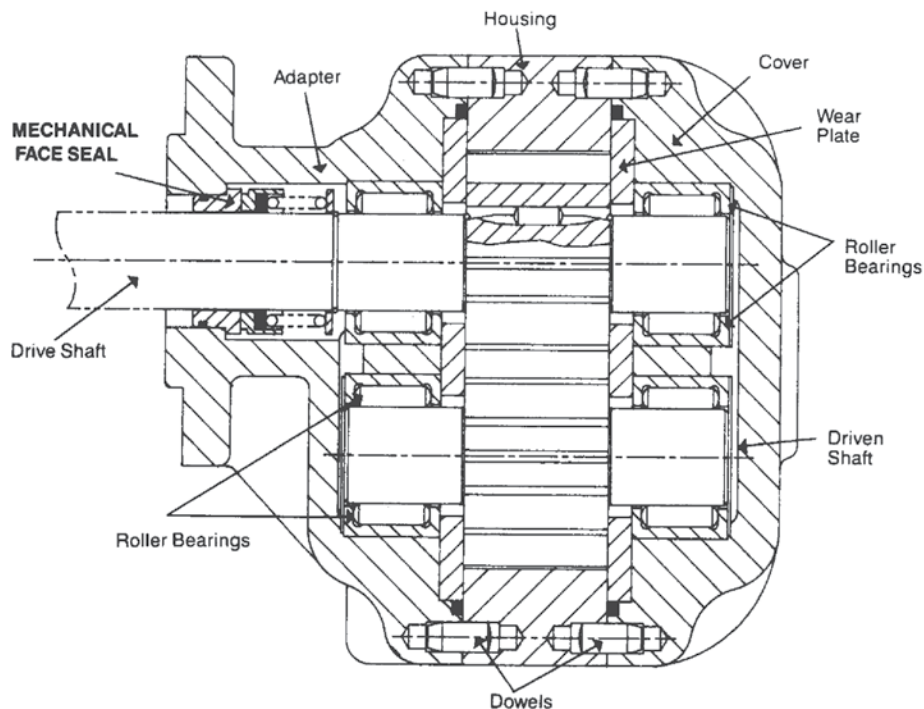
- The roller-bearing design, which uses fully pressure-lubricated, long-life roller bearings make these units relatively insensitive to contamination. This feature also makes the units fully repairable and rebuildable.

Advanced machining techniques allow the modified fixed clearance wear plate design to perform at maximum efficiency.

The use of an outboard bearing in some models allows limited side loading of the input/output shaft.

2000M rpm Ratings

Model	Maximum psi	Maximum Pump rpm	Maximum Motor rpm
2010M	1500	2400	3000
2015M	1500	2400	3000
2020M	1500	2400	3000
2025M	1500	2400	3000



Cross-Section of 2000M Bi-Rotational Series

Gear Pump / Motor Model Number System

2015 **M** **A** **1** **D** **2** **A** **B**
 Model Series Design Shaft Adapter Housing Cover Rotation

MODEL

2010 - 2.077 cir (34.04 ccr)
2015 - 3.110 cir (50.46 ccr)
2020 - 4.104 cir (60.08 ccr)
2025 - 5.197 cir (80.17 ccr)

SERIES

M- Series destination

DESIGN

A- No outboard bearing
C- With shielded outboard bearing

SHAFTS

1. SAE "A" Splined (use with adapters C & D)
3. 1" Dia. Straight Keyed 1- 1/2" Long (use with 'E' adapter only)
4. 1" Dia. Straight Keyed 2- 1/2" Long (use with adapters C & D)
- 5.* 1" Dia. 6 tooth spline (use with 'E' adapter only)
- 6.* 7/8" Straight, with nut
- 7.* 7/8" SAE "B" Taper
- 8.* 7/8" Straight, with key

ADAPTERS

- C.** Foot mount
- D.** 6 bolt round (with outboard bearing)
- E.** 6 bolt round (without outboard bearing)

HOUSINGS

1. No ports (use with cones B, C & D only)
2. ANPT ports
 2015 - 3/4" inlet outlet
 2020 - 1" inlet & outlet
 2025 - 1-1/4" inlet & outlet

3. Split flange ports
 2020 - 1-1/4" inlet & outlet
 2025 - 1-1/2" inlet & outlet

COVERS

- A.** No ports (use with #2 & 3 housing only)
- B.** ANPT 1" ports (rear ports)
- C.** 1-1/16-12" Straight Thread (rear ports)
- D.** 1-5/8" Straight Thread (side ports)

ROTATION

- B.** Bi-rotational

* Made to order

Shafts

- Pump rotation as viewed from the shaft end: clockwise rotation - outlet on right; counter-clockwise rotation - outlet on left.
- Motor rotation as viewed from the shaft end: clockwise rotation - inlet on left; counter-clockwise rotation - inlet on right.
- Mounting flanges noted as SAE conform to SAE J744C.

Maximum Recommended Drive Shaft Torque Transmission Capacity

- Satisfactory drive shaft torque transmission capacity is indicated with the product of pressure (P) and displacement (D) is less than or equal to (<) a given constant. The units of "P" and "D" are expressed in psig and in³/rev. (cir) respectively.

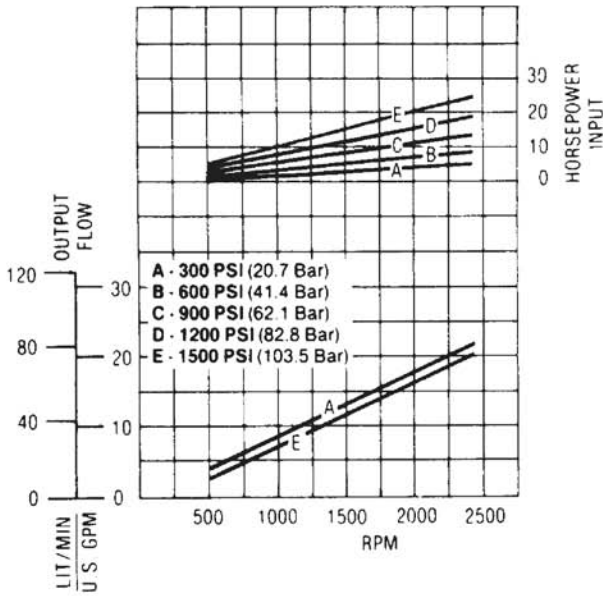
Gear Pump / Motor Shafts

<p>No. 1 Shaft - 5/8" SAE "A" Spline</p> <p>$P \times D \leq 6,800$</p> <p>Flat Root - Side Fit (Fillet Root Optional) Diametral Pitch 16/32 Number of Teeth 9 Pressure Angle 30° Use with adapters A, B, C & D only.</p>	<p>No. 2 Shaft - 7/8" SAE "B" Spline</p> <p>$P \times D \leq 11,000$</p> <p>Flat Root - Side Fit Diametral Pitch 16/32 Number of Teeth 13 Pressure Angle 30° Use with adapters A, B, C & D only.</p>	<p>No. 3 Shaft - 1" Straight Key</p> <p>$P \times D \leq 11,000$</p> <p>Use with "E" adapter only.</p>
<p>No. 4 Shaft - 1" Straight Key</p> <p>$P \times D \leq 11,000$</p> <p>Use with adapters A, B, C & D only.</p>	<p>No. 5 Shaft- 1" Spline</p> <p>$P \times D \leq 15,000$</p> <p>Number of Teeth 6 Major Dia. .997"-.995" Tooth Thickness .246"-.244" Minor Dia. .804"-.808" Pressure Angle 45° Use with "E" adapter only.</p> <p style="text-align: center;">MTO</p>	<p>No. 6 SAE Straight Shaft w/ Nut</p> <p>$P \times D 8,526$</p> <p style="text-align: center;">MTO</p>
<p>No. 7 7/8" SAE "B" Taper</p> <p>$P \times D 7,500$</p> <p style="text-align: center;">MTO</p>	<p>No. 8 7/8" Straight Shaft w/ Key</p> <p>$P \times D 7,500$</p> <p style="text-align: center;">MTO</p>	

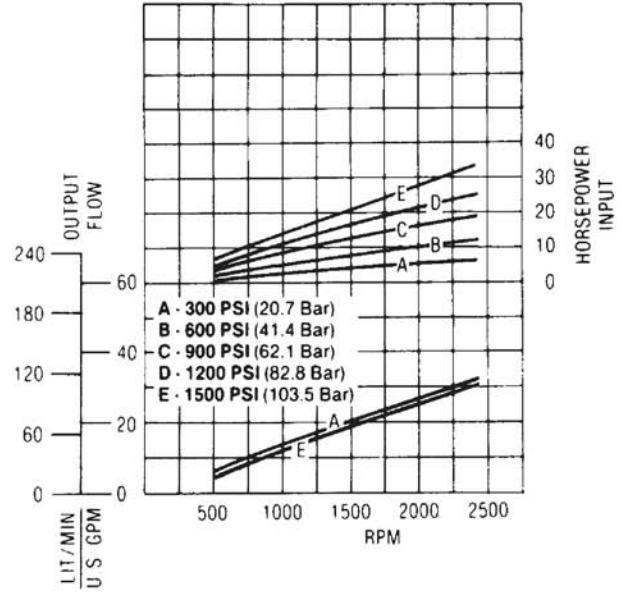
Gear Pump Performance Data

- Tests performed at 115 SSU 120° F.
- Consult David Brown for operation of pumps at: pressures and speeds above those shown on charts; temperatures above 180° F; speeds under 600 rpm when under load.
- Inlet conditions: Max. 5" Hg. vacuum at rated speed.

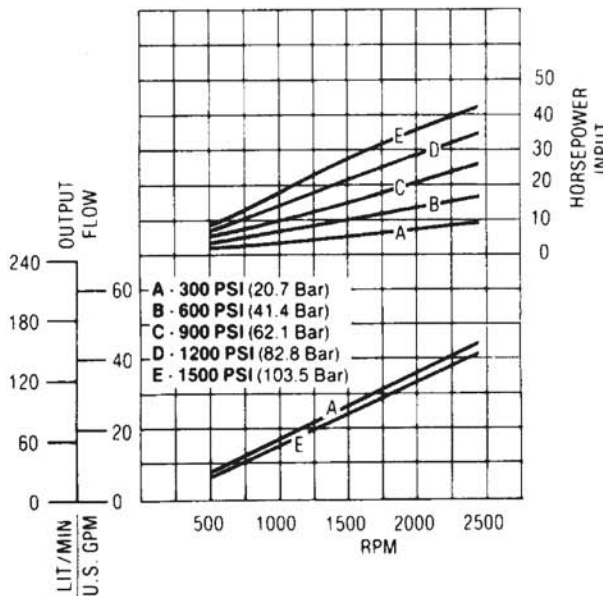
2010 Pump



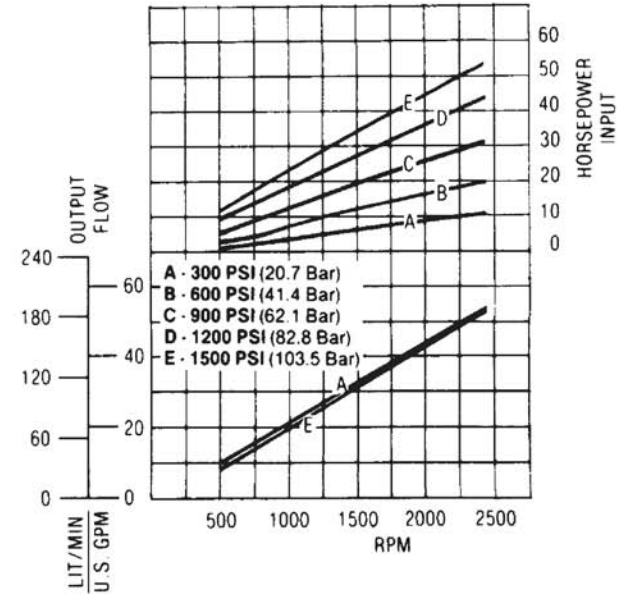
2015 Pump



2020 Pump



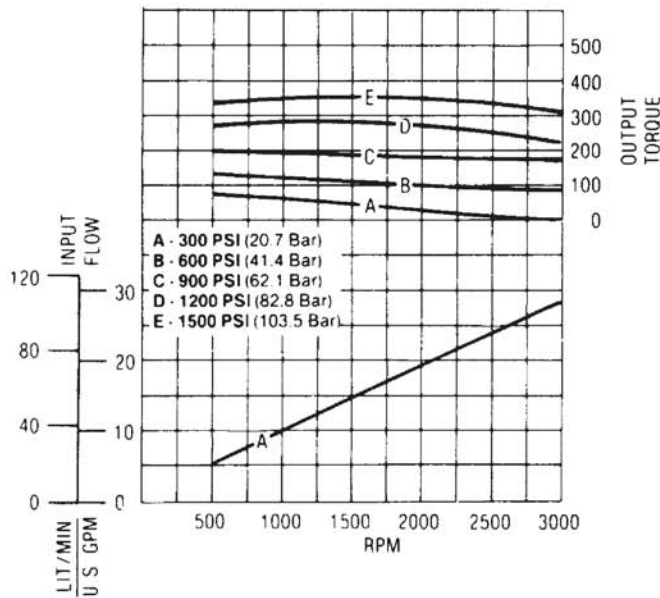
2025 Pump



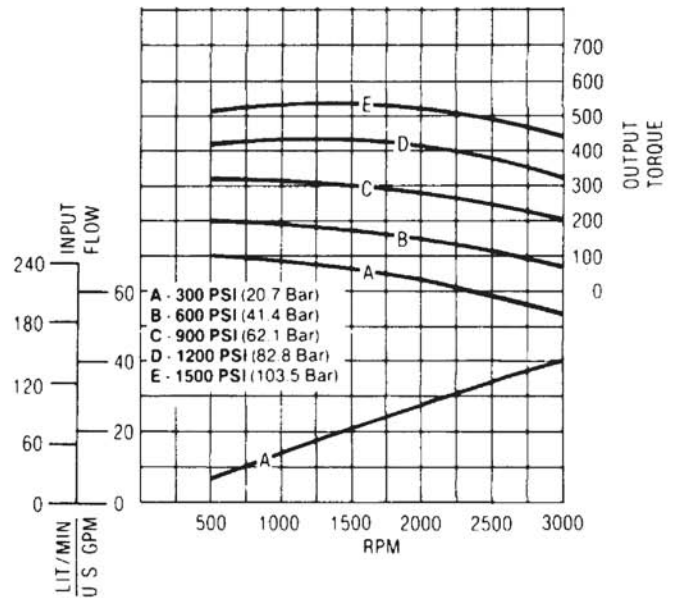
Gear Pump Performance Data

- Shown are the average results based on a series of laboratory tests of production units and are not necessarily representative of any one unit. Tests were run with the oil reservoir temperature at 120° F and viscosity 150 SSU at 100° F. Requests for more specific data should be directed to our Technical Service Department or our Sales Representatives.
- Recommended minimum operating speed is 400 rpm. Consult your David Brown Sales Representative for operation of motors at pressures and speeds above those shown on charts and temperatures above 180° F. Filtration of 10 micron or better is recommended for maximum motor life.

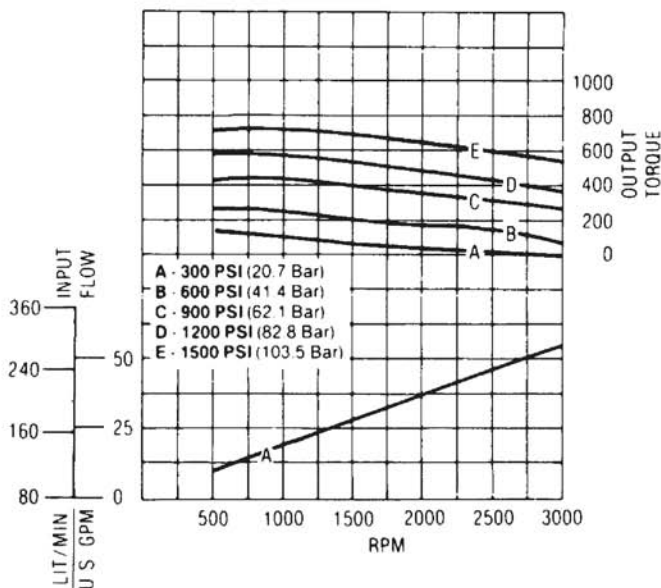
2010 Motor



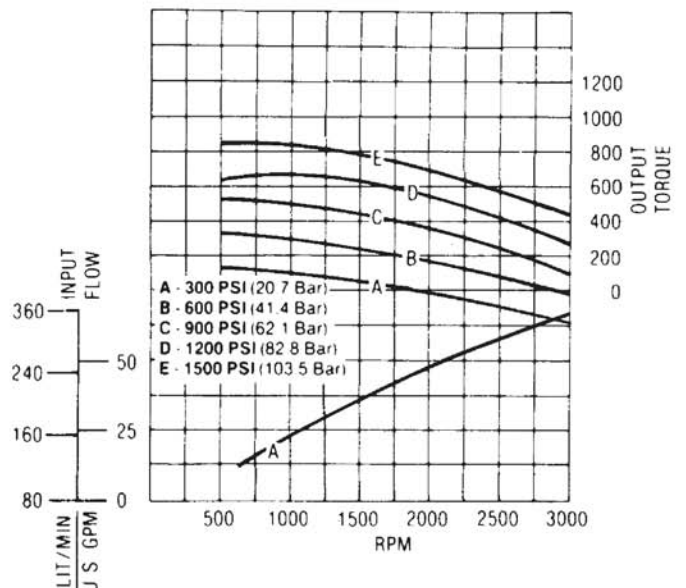
2015 Motor



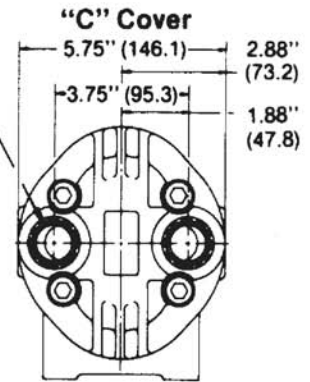
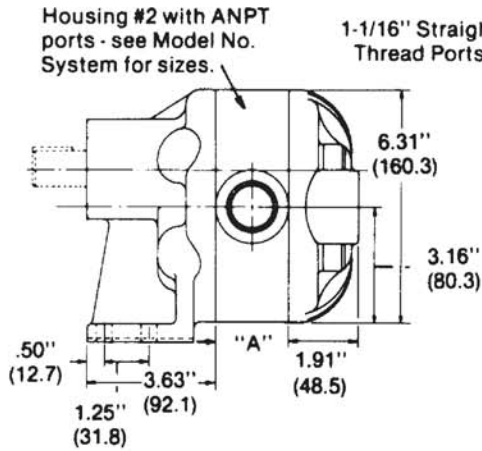
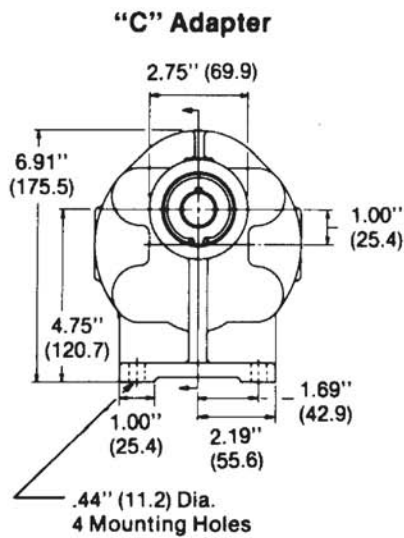
2020 Motor



2025 Motor



Gear Pump / Motor installation Dimensions



Model	Dim. "A"
2010	1.00" (25.4)
2015	1.50" (38.1)
2020	2.00" (50.8)
2025	2.50" (63.5)

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2010	1.00" (25.4)
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2020	2.00" (50.8)
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